

ASTRACT

"Apparatus and method for droplet measurements"

5 There is provided a liquid droplet monitoring and measuring apparatus (1) for a liquid droplet dispensing system having a nozzle (5) with a dispensing tip (7). The apparatus (1) comprises an inner chamber (2) surrounded by an outer shield (3), preferably not in contact with each other. An RF oscillator electrically energises the liquid through an electrode (11). The inner chamber (2) is connected through pre-
10 amplifiers (16), band pass filters (17), rectifier (18), low pass filter (19) and signal conditioning amplifier (20) to a signal read-out device (21). The operation of the apparatus is based on the measurement of the capacitance between the nozzle (5) and the inner chamber (2). As a droplet (15) grows on the dispensing tip (7), the capacitance between the nozzle (5) and the inner chamber (2) increases. Therefore,
15 the signal detected and received by the signal read-out device (21) changes. This change is directly related to the volume of the droplet which can therefore be measured. In another embodiment, the liquid is not energised but is used to change the dielectric constant of a capacitor formed by, for example, the nozzle (5) and a substrate.

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